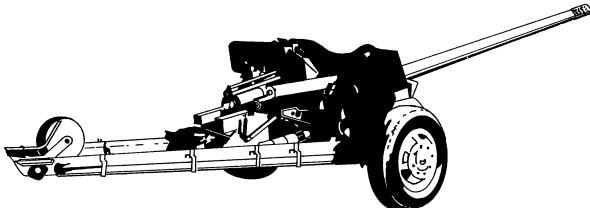


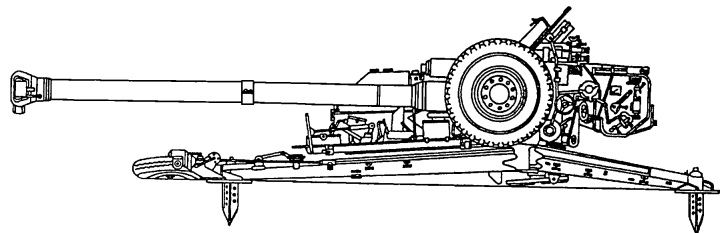
## Russian 100-mm Towed Antitank Gun MT-12

	<table><tr><th>Weapons &amp; Ammunition Types</th><th>Typical Combat Load</th></tr><tr><td>100-mm smoothbore gun</td><td>20</td></tr><tr><td>APFSDS-T</td><td>8</td></tr><tr><td>HEAT</td><td>4</td></tr><tr><td>Frag-HE</td><td>4</td></tr><tr><td>AT-10 ATGM</td><td>4</td></tr></table>	Weapons & Ammunition Types	Typical Combat Load	100-mm smoothbore gun	20	APFSDS-T	8	HEAT	4	Frag-HE	4	AT-10 ATGM	4
Weapons & Ammunition Types	Typical Combat Load												
100-mm smoothbore gun	20												
APFSDS-T	8												
HEAT	4												
Frag-HE	4												
AT-10 ATGM	4												
<p><b>SYSTEM</b> <b>Alternative Designations:</b> T-12A, 2A29 <b>Date of Introduction:</b> 1972 <b>Proliferation:</b> At least 12 countries <b>Description:</b> Crew: 6 Combat Weight (mt): 3.1 Length Overall, Travel (m): 9.65 Height Overall, Travel (m): 1.6 Width Overall, Travel (m): 2.3</p> <p><b>Automotive Performance:</b> Mount: Two-wheeled carriage with twin trails and coaster wheel Prime mover: MT-LB-T, URAL-375D and other trucks Towed Speed (km/h):     Max Road: 60     Max Off-Road: INA     Average Cross-Country: 25 Fording Depth (m): INA Emplace Time (min): 2-3 Displace Time (min): 2-3 <b>Radio:</b> N/A <b>Protection:</b> Gun shield</p> <p><b>ARMAMENT</b> <b>Main Armaments:</b> Caliber, Type, Name: 100-mm smoothbore gun 2A29 Rate of Fire (rd/min): 6-8/up to 15 indirect fire Loader Type: Manual Ready/Stowed Rounds: 0/20 Elevation (°): -7/+20 Fire on Move: No</p> <p><b>ATGM Launcher:</b> Launch Method: Gun-launched, 2A29 smoothbore gun Guidance: Laser-beam rider Command Link: Encoded laser-beam Launcher Dismountable: No</p> <p><b>FIRE CONTROL</b> <b>FCS Name:</b> N/A <b>Main Gun Stabilization:</b> N/A <b>Rangefinder:</b> N/A <b>Sights w/Magnification:</b> Gunner:     Day: OP40M-40U direct fire, 5.5x / PG-1M indirect fire     Field of View (°): 11     Acquisition Range (m): 3,000/8,200 indirect fire     Night: APN6-40 II sight, 6.8x</p>	<p>Field of View (°): 7 Acquisition Range (m): 2,000</p> <p><b>VARIANTS</b> <b>T-12:</b> Original version of Russian gun. MT-12 has changes in carriage and obturator, which do not affect lethality performance.</p> <p><b>MT-12R:</b> Russian upgrade with radar-directed fire control system, for use at night and adverse weather.</p> <p><b>Topaz:</b> Former-Yugoslav variant of T-12, with the 2A19M gun mounted on a D-30 carriage. Some have AT FCS-1 (see NOTES).</p> <p><b>MAIN ARMAMENT AMMUNITION</b> <b>Caliber, Type, Name:</b> 100-mm APFSDS-T, BM-412M, Romanian Maximum Aimed Range (m): 2,500, 3,000 platoon volley Max Effective Range (m):     Day: INA     Night: INA Armor Penetration (mm): 418 at 2,000 m/380 at 3,000 m</p> <p><b>Caliber, Type, Name:</b> 100-mm APFSDS-T, M1000, Belgian Maximum Aimed Range (m): 3,000/platoon volley INA Max Effective Range (m):     Day: INA     Night: INA Armor Penetration(mm): Triple heavy target at 4,000 meters</p> <p><b>Caliber, Type, Name:</b> 100-mm HEAT, BK-17 Maximum Aimed Range (m): 2,500, 3,000 platoon volley Max Effective Range (m):     Day: INA     Night: INA Armor Penetration (mm): 380</p> <p><b>Other Ammunition Types:</b> Russian BM-2/-20/-25 APFSDS-T; OF-15 Frag-HE; BK-5M HEAT-FS</p> <p><b>Antitank Guided Missiles:</b> Name: AT-10/Kastet Warhead Type: Shaped charge (HEAT) Armor Penetration (mm): 650 (RHA) Range (m): 5,000</p> <p>Name: AT-10b/Kan Warhead Type: Tandem Shaped charge (HEAT) Armor Penetration (mm): 700 (RHA) behind ERA Range (m): 5,000</p>												

### NOTES

Russian 2nd generation II sights are available. The daysight can be used at night if the target is illuminated. Thermal sights are available. The MT-12R radar FCS can be used for surveillance, acquisition, and tracking. The Serb Iskra AT FCS-1 computerized laser rangefinder FCS is on is offered for sale. Range is 500-3,000 meters. The ATGM sight and laser guidance device has a 5,000-meter range and is a day sight only. Ranges (m) for Frag-HE: 8,200 indirect fire/3,000 direct-fire. Rate of fire for indirect fire (Frag-HE) is up to 15 rd/min.

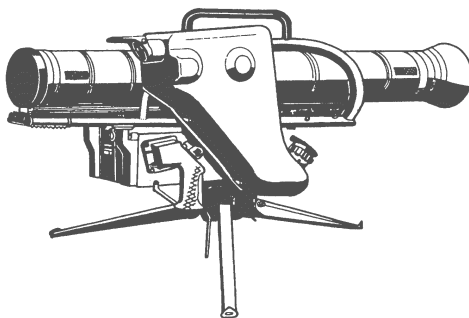
## Russian 125-mm Towed Antitank Gun 2A45M

	<table><tr><th>Weapons &amp; Ammunition Types</th><th>Typical Combat Load</th></tr><tr><td>125-mm smoothbore gun</td><td>*60</td></tr><tr><td>APFSDS-T</td><td>28</td></tr><tr><td>HEAT</td><td>4</td></tr><tr><td>Frag-HE</td><td>20</td></tr><tr><td>Invar/Svir ATGM</td><td>8</td></tr><tr><td></td><td>* Mix estimate</td></tr></table>	Weapons & Ammunition Types	Typical Combat Load	125-mm smoothbore gun	*60	APFSDS-T	28	HEAT	4	Frag-HE	20	Invar/Svir ATGM	8		* Mix estimate
Weapons & Ammunition Types	Typical Combat Load														
125-mm smoothbore gun	*60														
APFSDS-T	28														
HEAT	4														
Frag-HE	20														
Invar/Svir ATGM	8														
	* Mix estimate														
<p><b>SYSTEM</b> <b>Alternative Designations:</b> SPRUT-B (Octopus-B) <b>Date of Introduction:</b> 1980s <b>Proliferation:</b> At least 1 country</p> <p><b>Description:</b> Crew: 7 Combat Weight (mt): 6.5 Length Overall, Travel (m): 7.12 Height Overall, Travel (m): 2.09, 2.35 with APU (0.90 firing) Width Overall, Travel (m): 2.3</p> <p><b>Automotive Performance:</b> Mount: Two-wheeled carriage with three trails and coaster wheel Prime mover: MT-LB, URAL-4320, and other trucks Towed Speed (km/h):     Max Road: 80     Max Off-Road: INA     Average Cross-Country: 25 Emplace Time (min): 1.5 Displace Time (min): 2.0 <b>Radio:</b> On the prime mover <b>Protection:</b> Gun shield</p> <p><b>ARMAMENT</b> <b>Main Armaments:</b> Caliber, Type, Name: 125-mm smoothbore gun 2A45M Rate of Fire (rd/min): 6-8 Loader Type: Manual, separate-loading Ready/Stowed Rounds: 6/60 on prime mover Elevation (°): -6 to +25 Fire on Move: No</p> <p><b>ATGM Launcher:</b> Launch Method: Gun-launched Guidance: Laser-beam rider, with 9S53 guidance device Command Link: Encoded laser-beam Launcher Dismountable: No</p> <p><b>FIRE CONTROL</b> <b>FCS Name:</b> N/A <b>Main Gun Stabilization:</b> N/A <b>Rangefinder:</b> N/A <b>Sights w/Magnification:</b> Gunner:     Day: OP4M-48A, 5x, direct fire, 5.5x / 2Ts33 iron PG-1M, 4x, indirect fire     Field of View (°): 11 on OP4M-48A, 10 on PG-1M Acquisition     Range (m): 4,000/8,200 indirect fire</p>	<p>Night: 1PN53-10 II sight, 6.8x; 1PN80 thermal sight available Field of View (°): 7 Acquisition Range (m): 800-1,300</p> <p><b>VARIANTS</b> None</p> <p><b>MAIN ARMAMENT AMMUNITION</b> <b>Caliber, Type, Name:</b> 125-mm APFSDS-T, BM-42M Max Aimed Range (m): 3,000 Max Effective Range (m):     Day: 2,000-3,000     Night: 800-1,300 II sight Armor Penetration (mm): 590-630 at 2,000 meters</p> <p><b>Caliber, Type, Name:</b> 125-mm HEAT, BK-27 Max Aimed Range (m): 2,500 Max Effective Range (m):     Day: INA     Night: 800-1,300 II sight Armor Penetration (mm): 700-800</p> <p><b>Caliber, Type, Name:</b> 125-mm HEAT-MP, BK-29M Max Aimed Range (m): 2,500 Max Effective Range (m):     Day: 2,500     Night: 800-1300 II sight Armor Penetration (mm): 650-750</p> <p><b>Caliber, Type, Name:</b> 125-mm Frag-HE-T, OF-26 Max Aimed Range (m): 5,000 Max Effective Range (m):     Day: 2,500     Night: 800-1,300 II sight, direct fire Armor Penetration (mm): Can defeat IFVs on impact</p> <p><b>Other Ammunition Types:</b> Giat 125G1, and BM-42 and BM-32 APFSDS-T. The Russians may have a BM-42M with DU penetrator.</p> <p><b>Antitank Guided Missiles:</b> Name: AT-11/SVIR Warhead Type: Shaped charge (HEAT) Armor Penetration (mm): 700 (RHA) behind ERA/800 conventional Range (m): 5,000</p> <p>Name: AT-11B/INVAR Warhead Type: Tandem shaped charge Armor Penetration (mm): 800 (RHA) behind ERA /870 conventional Range (m): 5,000</p>														

### NOTES

The ATGM sight and laser guidance device has a 5,000-meter range, day sight only. The daysight can be used at night if the target is illuminated.

## European ATGM Launcher MILAN 2 /MILAN 3

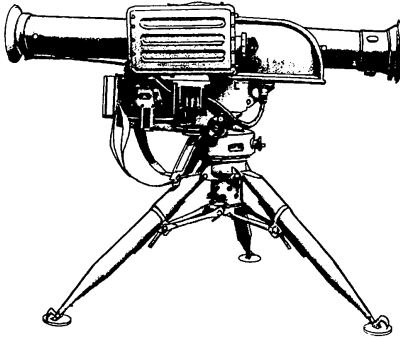
 <p style="text-align: center;">MILAN 2</p>	<p><b>Weapons &amp; Ammunition Types</b></p> <p><b>ATGM Launcher Total</b></p> <p>HEAT ATGM</p>	<p><b>Typical Combat Load</b></p> <p>1 or 2</p>
<p><b>SYSTEM</b> (MILAN 2 / MILAN 3, where their data differs) <b>Alternative Designations:</b> Missile d/Infanterie Leger Antichar <b>Date of Introduction:</b> 1985 MILAN 2/1996 MILAN 3 <b>Proliferation:</b> At least 39 countries MILAN/MILAN 2/1 MILAN 3 <b>Description:</b> Crew: 2, 3 with ammo bearer for second missile Primary Mount: Ground mount on tripod, including operator prone Alternate Mounts: IFV, ATGM Launcher Vehicle, jeep, helicopter Weight Overall, Excluding Missile (kg): 16.5 Length Overall in Firing Position (m): 1.2 (missile canister) Height Overall In Firing Position (m): 0.6 Width Overall In Firing Position (m): 0.42</p> <p><b>ARMAMENT</b> <b>Launcher</b> Name: MILAN 2/MILAN 3 Launch Method: Tube-launched from carrying canister Elevation (°): INA Rate of Launch: (missiles/min): 2-3, depending on range Reaction Time (sec): INA Emplacement Time (min): INA Displacement Time (min): INA Ready/Stowed Missiles: 2-man crew (1 on launcher), 0 stowed 3-man crew (1 on launcher), + 1 ready, 0 stowed</p> <p><b>FIRE CONTROL</b> <b>FCS Name:</b> <b>Guidance:</b> SACLOS Command Link: Wire Beacon Type: Pyrotechnic flare, MILAN 2/ xenon bulb, MILAN 3 Tracker Type: IR, 2.2 μm/ 0.9 μm MILAN 3 Susceptible To Countermeasures: Smoke, counterfire, moving Counter-countermeasures: Encoded tracker, counters EOIRCM <b>Rangefinder:</b> INA <b>Sights w/Magnification:</b> Gunner: Day: Name INA, 7x Field of View (°): 4.3 Acquisition Range (m): INA Night: MIRA Thermal sight available Field of View (°): 3 x 6 Acquisition Range (m): 4,000 detection/ 2,000 recognition</p>	<p><b>VARIANTS</b> The missile launchers can be pintle-mounted for launch from vehicles, such as the Marder 1A3 IFV. A variety of reconnaissance vehicles, such as the French VBL, are fitted with MILAN launchers.</p> <p><b>MILAN 2T:</b> Improved ATGM with tandem warhead - not fielded</p> <p><b>MILAN 3:</b> Variant with a CCD tracker for the missile beacon. MILAN, MILAN 2, and MILAN 3 missiles can be fired from all three launchers; however, the EOIRCM will only work with both MILAN 3 launcher and MILAN 3 missile.</p> <p><b>MCT:</b> Compact turret w/two launchers for Spartan and other APCs.</p> <p><b>AMMUNITION</b> <b>Antitank Guided Missiles</b> Name: MILAN Missile Weight (kg): 6.7 Warhead Type: Shaped Charge (HEAT) Armor Penetration (mm): 600 (RHA) Min/Max Range (m): 25/2,000 Probability of Hit (%): &gt;90 Average Velocity (m/s): 160 Time of Flight to Max Range (sec): 12.5</p> <p>Name: MILAN 2 Missile Weight (kg): 6.7 Warhead Type: Tandem Shaped Charge Armor Penetration (mm): 800 (RHA) Min/Max Range (m): 25/2,000 Probability of Hit (%): &gt;90 Average Velocity (m/s): 160 Time of Flight to Max Range (sec): 12.5</p> <p>Name: MILAN 3 Missile Weight (kg): 7.1 Warhead Type: Tandem Shaped Charge with precursor charge Armor Penetration (mm): 880 (RHA) Min/Max Range (m): 20/1,920 Probability of Hit (%): &gt;90 Average Velocity (m/s): 160 Time of Flight to Max Range (sec): 12.5</p> <p><b>Other Missiles:</b> N/A</p>	

### NOTES

Although the launcher is portable and has been labeled man-portable, it is too heavy for one-man carry with missile.

A kit is available for retrofit to MILAN and MILAN 2 launchers, to permit firing MILAN 3 ATGM with EOIRCM (jammer countermeasure).

## Chinese ATGM Launcher Red Arrow-8

	<div>Weapons &amp; Ammunition Types</div> <div>ATGM Launcher Total</div> <div>HEAT ATGM</div>	<div>Typical Combat Load</div> <div>Ground 1-5</div> <div>Vehicle 8-12</div>
<div>SYSTEM</div> <div>Alternative Designations: Hongjian-8, RA-8, HJ-8</div> <div>Date of Introduction: 1986</div> <div>Proliferation: At least 4 countries</div> <div>Description:</div> <div>Crew: 4</div> <div>Primary Mount: Ground mount on tripod, including operator prone</div> <div>Alternate Mounts: APC, ATGM Launcher Vehicle, jeep, helicopter</div> <div>Weight Overall, Excluding Missile (kg): 63</div> <div>Length Overall in Firing Position (m): 1.57 (missile canister)</div> <div>Height Overall In Firing Position (m): INA</div> <div>Width Overall In Firing Position (m): INA</div> <div>ARMAMENT</div> <div>Launcher</div> <div>Name: Red Arrow 8</div> <div>Launch Method: Tube-launched from carrying canister</div> <div>Elevation (°) (-/+): -7 to +12</div> <div>Rate of Launch: (missiles/min): 2-3, depending on range</div> <div>Reaction Time (sec): INA</div> <div>Emplacement Time (min): INA</div> <div>Displacement Time (min): INA</div> <div>Ready/Stowed Missiles: INA</div> <div>FIRE CONTROL</div> <div>FCS Name: INA</div> <div>Guidance: SACLOS</div> <div>Command Link: Wire</div> <div>Beacon Type: Incandescent infrared bulb</div> <div>Tracker Type: IR</div> <div>Susceptible To Countermeasures: IR jammer, smoke, counterfire</div> <div>Counter-countermeasures: Jamming CM (NFI)</div> <div>Rangefinder: INA</div>	<div>Sights w/Magnification:</div> <div>Gunner:</div> <div>Day: Name INA, 12x</div> <div>Field of View (°): INA</div> <div>Acquisition Range (m): INA</div> <div>Night: PTI-32 Thermal sight available (copy of Thorn EMI)</div> <div>Field of View (°): INA</div> <div>Acquisition Range (m): 4,000 detection/2,000 identification</div> <div>VARIANTS</div> <div>Baktar Shikan: Pakistani variant, also called Green Arrow.</div> <div>Missile data is similar to Red Arrow-8A</div> <div>AMMUNITION</div> <div>Antitank Guided Missiles</div> <div>Name: Red Arrow-8A</div> <div>Alternative Designation: HJ-8A</div> <div>Missile Weight (kg): 24.5 (in tube), 22.5 ready for launch</div> <div>Warhead Type: Shaped Charge (HEAT)</div> <div>Armor Penetration (mm): 800</div> <div>Min/Max Range (m): 100/3,000</div> <div>Probability of Hit (%): 90</div> <div>Average Velocity (m/s): 220</div> <div>Time of Flight to Max Range (sec): 13.6</div> <div>Name: Red Arrow-8E</div> <div>Alternative Designation: HJ-8E</div> <div>Missile Weight (kg): 24.5 (in tube), 22.5 ready for launch</div> <div>Warhead Type: Tandem Shaped Charge (HEAT)</div> <div>Armor Penetration (mm): 900</div> <div>Min/Max Range (m): 100/4,000</div> <div>Probability of Hit (%): 90</div> <div>Average Velocity (m/s): 210</div> <div>Time of Flight to Max Range (sec): 19</div> <div>Other Missiles: There may be -8, -8B and -8C versions of the ATGM; however, the above are more likely for encounter.</div>	

### NOTES

Although the launcher is portable, it too heavy for one-man carry. Vehicle mounts are jeeps, such as the Chinese BJ-212 and BJ 2023 C, and APCs such as the Chinese WZ-551 and Type 90 APC. A Chinese four launcher turret has been fitted on ATGM launcher vehicles including the Chinese YW 531, WZ-551, and YW 534, and Chilean Piranha. Helicopter mounts are the Chinese Zhi-9 (license-built SA-354N/Dauphin 2) and French Antelope.